

## **ABSTRACT**

A method for etching a deep trench in a semiconductor substrate. The method comprises the steps of (a) forming a hard mask layer on top of the semiconductor substrate, (b) etching a hard mask opening in the hard mask layer so as to expose the semiconductor substrate to the atmosphere through the hard mask layer opening, wherein the step of etching the hard mask opening includes the step of etching a bottom portion of the hard mask opening such that a side wall of the bottom portion of the hard mask opening is substantially vertical, and (c) etching a deep trench in the substrate via the hard mask opening.